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SCIENTIFIC CONGRESS ON FOOD HYGIENE -- OCTOBER 1960

By Professor Jozef Wierchowski

- Czechoslovakia -

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FOREWORD

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[Following is the translation of an article by Prof. Dr. Jozef Wierzchowski in Farmacja Polska (Polish Pharmacy), Vol XVI No 23-24, Warsaw, 31 December 1960].

The Hygiene Section of the Czechoslovak Medical Society organized in Brno 17-19 October 1960 a national congress devoted to discussing the problems of hygienic safeguarding of food. Over 250 persons participated in this Congress, including 15 guests from abroad-- from Poland, Hungary, the GDR, and Yugoslavia.

From Poland three persons were delegated to this congress Prof Wierzchowski from Gdansk, Magister Klimczakowa from Warsaw, and Magister Zajonc from Cracow.

Representatives of both science and the food industry took part in the congress. Representatives of scientific institutes and scientific departments of universities met there with representatives of large industrial establishments and sanitary-epidemiological stations. Workers of the health sector debated issues together with workers of other sectors (agriculture, food industry, and others).

The program of the congress was principally devoted to discussing the problems of food hygiene in the third Five-Year Plan. This was discussed in a collective paper by Docent Dr. K. Halacka, Dr. K. Lavicky and Dr. S. Brabiec [or Brabco or perhaps some other spelling; the name here is in genitive form -- brabca. Translator], and in 41 other research papers which dealt with the following topics:

- a) Body building and biological value of food -- 10 papers
- b) Microbiology of food -- 7 papers
- c) Foreign substances in food -- 14 papers
- d) Toxiology of food -- 5 papers
- e) Hygiene of food packaging -- 5 papers.

The principal report on the tasks of food hygiene in the third Czechoslovak Five-Year Plan was delivered by the chairman of the organizational committee of the Congress, Dr. K. Halacka. He analyzed in detail its present state and set forth the things to be done in order to increase the research effort in the sanitary-hygienic appraisal of food. The lecturer pointed out that the quality of the product depends first of all on the hygiene of its production, which is inseparable from mechanization of production. Closely connected with this is the problem of foreign substances in food, and the lecturer pointed out that a special commission has been called into being to solve this problem.

As in Poland, so also in Czechoslovakia the question of coloring of food products is considered first of all from the point of view of using natural dyestuffs which are harmless to health. As in Poland, so also there it is forbidden to conserve food products with antibiotics, although tendencies of this kind have existed.

The lecturer showed the need for reanalyzing the efficacy of milk pasteurization from the point of view of maintaining the high nourishing value of milk and its sanitary safety. It is also necessary to increase the consumption of milk to 0.5 liter per person, which will provide the organism with more calcium.

The lecturer pointed out that more care and more work should be devoted to the field of food hygiene and for the purpose of rationalizing the food supply of the citizen.

The lecturer saw the need for drawing the sanitary-epidemiological stations into this work. Especially helpful here could be the provincial stations. The preventive control carried out by the stations as well as their hygienic watchfulness could help considerably in solving the problems of food hygiene. The stations, however, must be especially organized and equipped to deal with these problems. The lecturer also saw the need for the closest cooperation between the scientific institutes and the departments of higher institutions. The solution of all these problems can be carried out with complete success, since not profit but the good of society is the main goal of the camp of socialist states.

After the program lecture the scientific research papers were read in 10-20 announcements. The papers read by members of the Scientific Institute for Food Industry in Prague were predominantly concerned with the problems of body-building and the biological value of food products. Among the most interesting of these papers should be mentioned a work concerned with the problems of enriching food with ascorbic acid, the change in vitamin A and riboflavin content in the production of cheese from sheep's milk, experiments with chemical "peeling" of potatoes, and others.

At a same meeting, on the morning of 17 October, 1960 I reported on a work completed in the Department of Food Science at A.M. [apparently the name of a higher learning institution] in Gdansk and in the Division of Hygiene of Nourishment and Food at W.S.S.E.

[Abbreviation unexplained in source. The name of a higher learning institution?] In Gdansk concerned with biological experiments on the nourishment value of raw and conserved fish. The purpose of the work was the proper evaluation of the nourishment values of these food articles by means of observing the morphologically discernible differences between white mice experimentally fed on a diet containing a supplement of raw fish (baltic herring) and those fed with a supplement of conserved fish (baltic herring in oil).

In the experiments, the following parameters were taken into consideration: outer form, growth, gain in weight, reproduction, and reëntgen control of bone structure. There were also electrophoretic and chromatographic analysis of albuminous fractions of blood serum.

In the experiments there could be observed certain differences in the groups of mice, depending on the diet they were fed. These differences were mainly in gain of weight, growth, reproduction, and outer forms of the mice.

Mice whose diet contained raw fish showed the greatest increase in weight; the mice fed with supplement of conserved fish gained 20% less weight. Mice on a breeding diet showed little difference from this later category, while mice receiving a basic diet barely reached half the weight of the first category.

The increase in degree of calcification of mice on a breeding diet as well as those fed raw fish and conserved fish supplements had a regular character. However, the outline of the bone structure of the mice on a basic diet was weak.

The electrophoretic and chromatographic analysis of certain fractions of the albuminous blood serum showed in mice with supplemental fish diet -- both raw and conserved -- a lowering of the globulin level with a simultaneous rise of the albumin level.

The results obtained in the experiments are proof of the high nourishment value of fish and fish conserves, the latter especially should be considered a rich source of mineral salts, in particular calcium, which as we know is deficient in our basic food products.

The above report met with interest, which was confirmed in talks I had with several persons whom I gave detailed information on our research work.

Six reports were devoted to the problems of the microbiology of food (and personal utility goods). They dealt with changes in hams caused by pasteurization, a fast method of appraising the bacteriological infection of meat, a fast method of indicating B. coliaerogenes in milk and other products. An interesting paper was one dealing with the influence of the technological process on the purity of cosmetic products. This was the only paper read by the workers (scientific) of a provincial sanitary-epidemiological station. The author of this paper (V. Muzikar, K.H.E.S.) [the initials apparently refer to an institute with which Muzikar is affiliated.]

has carried out a number of analyses of toothpaste, cosmetic creams and shampoos; the results of these analyses were the basis of a wider discussion in which he demonstrated that the cause of infections are certain raw materials, like water, gelatine, and others.

The most time, however, was devoted to reports on research dealing with the problems of foreign substances in food.

These reports dealt for example with radioactive tests on food, carried out in the Ygienic Institute in Prague, tests of certain conserving agents and of dyestuffs used in the food industry. A considerable place in the reports was taken up with the problem of foreign substances in food which can cause infection in food.

The next group of reports discussing the problems connected with toxicology of food consisted of five reports. One report was by a representative of the GDR, a worker of the Food Hygiene Institute at Humboldt University in Berlin, which dealt with the problems of disclosing toxins in meat with the help of color reaction.

Of interest was also a report describing investigations on biological harmfulness of tuna meat (Malkus). The results of investigations carried out on meat from tuna fish which caused food poisoning in several cities of Czechoslovakia showed that the increase in histamine content in the tuna caused these numerous poisonings.

Analogic results are to be found in scientific literature. The Japanese scientists (Igashi -- 1949, Statake -- 1952, Shimizu -- 1953) confirmed the appearance of histamine in meat of fish besides other amines such as, for example, tyramine, isoamylamine and others although not all are in agreement as to whether histamine develops from histidine under the influence of microbes or as a result of enzymatic processes. Without taking into consideration these differences of opinion, it is necessary to point out that the corroboration as regards to histamine is important mostly from the sanitary point of view, as an indicator of the fitness for consumption of the fish.

The chemical investigations as well as the bacteriological investigations carried out by the Czechoslovak colleagues failed to show that microbe infections [in the fish?] could cause disease among humans.

The last five papers were concerned with research in the field of hygiene of food packaging; one of these papers was delivered by a worker from the Food Institute in Budapest. These papers dealt with the passing of harmful substances from the packaging to the food and in this way infecting it.

Mention should be made here of the interesting work of Malkus and Horacek from the Hygiene Ustav in Prague on the theme of the possibility of passing of formaldehyde from the melamine vessel to the food. Also to be mentioned is the report by Housek from the county sanitary-epidemiological station in Gottwaldow discussing the prospective sanitary control of artificial plastics to be used in the food industry.

As can be seen from the above short review, the program of the congress was quite wide, taking up the two days. The discussion part, therefore, was transferred to evening hours.

Several persons took part in the discussion, reading previously prepared reports. Docent Hecko from the Mygiene Institute in Bratislava, for example, reported on the issue of food norms for children. The same lecturer also dealt with the issue of radioactivity in the neighborhood of atomic electric generators. The director of the Sanitary-Epidemiological Station in Prague reported on research concerning nourishment for children. Another participant in the discussion made remarks on the issue of nourishment for miners, with special stress on the level of vitamin C and cholesterol in the blood.

Docentn Masek, Director of the Food Institute in Prague summed up the reports part of the Congress, declaring that the themes for the Congress was properly chosen and properly carried out. A mark of the great interest in the issues discussed on the Congress is the number of papers in the field of foreign substances in food. The material reported at the Congress was collected and handed over to the authorities. All the reports will be published in a special issue of Hygieny.

The third day of the Congress, 19 October, was devoted to visiting the fruit and vegetable processing plants and the wineries in the neighborhood of Brno. Not feeling strong enough to take part in the excursion, I stayed in Brno where the hosts of the Congress facilitated my visiting the Institute of Hygiene and Technology of Food in the Veterinary Department of the Brno Higher Agricultural School. Docent Z. Matyas was my guide and he gave me much interesting information; I had long, interesting and very profitable discussions with him on the theme of inspection of food of animal origin.

Summing up the collected impressions, I consider my participation in the scientific congress of the Czechoslovak food people very profitable, since this participation has enriched to a certain degree our knowledge in the field of hygienic safeguarding of food products; in addition it made it possible for me to exchange ideas on the theme of food inspection. Also not without meaning is the fact that participation in the Congress made it possible for me to represent a fragment of research work carried out in the institutes under my direction and with my active participation.

I, therefore, consider it my duty to express thanks in this place to the Ministry of Health and Social Welfare for delegating me to this Congress.

Finally I would like to stress the pleasant atmosphere of the meetings as well as the efforts of the hosts of the Congress to create the best possible conditions for this short stay in Brno.